THE SIPRO P.7 MOCK 2024

MATHEMATICS

Time Allowed: *2 Hours 30 Minutes*

	Random No.						Personal No.		
Index No.									

Candidate's Name: _____

Candidate's Signature: _____

School Random No: _____ IR COPY

District ID: _____

READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

1. This paper has two sections: A and B.
2. Section A has 20 questions (40 Marks).
3. Section B has 12 questions (60 Marks).
4. Attempt all questions in both sections. All answers to both sections A and B must be written in the spaces provided.
5. All answers must be written in blue or black ball point pens or *ink*. Only diagrams and graph work must be done in *pencil*.
6. Unnecessary *alteration/crossing* of work will lead to loss of marks.
7. Any *handwriting* that cannot be easily read may lead to loss of marks.
8. Do not fill anything in the boxes indicated:

"FOR EXAMINER'S USE ONLY"

For Examiner's Use Only;

Qn No.	MARKS	INITIALS
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
Total		

Please turn over

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SECTION A: 40 MARKS

*Attempt **all** questions in this section.*
*Questions **1** to **20** carry **two** marks each*

1. **Work out:** 1 2 4
   x 2
   2 4 8 ✓B2

2. **Simplify:** 4k - m + 5k + 3m.
   4K + 5K + 3m - m ✓m1
   9K + 2m B1

3. Write "Four thousand, four hundred forty-four in **figures**.

Thousands	Units
H	444 B2

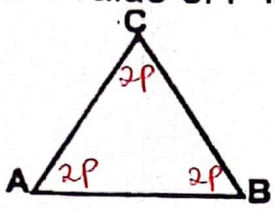
   H, 444 ✓

4. A block weighs **630gm**. Express the mass of the block in kilogrammes.
   1000gm = 1 kg
   630gm = $\left(\frac{630}{1000}\right)$ kg ✓
   0.63kg ✓B1

5. If set R = {1, 2, 3, 4, 5} and T = {2, 4, 6. 7}. Find the **number** of **subsets** in R ∩ T.
   R = {1, 2, 3, 4, 5}
   T = {2, 4, 6, 7}
   R ∩ T = {2, 4} ✓B1
   No. of subsets = 2^n
   2^2
   2x2
   4 subsets ✓ B1

6. Given that 2t + 4 = 10, find the value of 2t.
   2t + 4 - 4 = 10 - 4
   2t = 6
   OR
   $\frac{2t}{2} = \frac{6}{2}$
   t = 3
   $2t = 2 \times t$
   2×3
   2t = 6

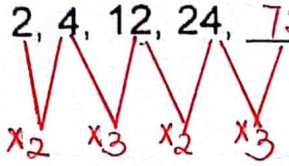
7. The diagram below shows a triangle **ABC** in which ∠ABC = ∠BAC = ∠ACB = 2P. Find the value of P in degrees.



$2P + 2P + 2P = 180°$ ✓
$6P = 180°$ m|
$\frac{6P}{6} = \frac{180}{6}$ 30° ✓
$P = 30°$ B|

8. Find the next number in the sequence.

2, 4, 12, 24, 72 ✓ B2



24
x 3
72 ✓

9. Find the supplementary angle of $(75 - 3t)^0$.

$180° - (75 - 3t)°$
$180° - 75° + 3t°$ ✓ m|
$105° + 3t°$
$(105 + 3t)°$ ✓ B|

10. A flight that took $1\frac{1}{2}$ hours ended at 1:00pm. At what **time** did the flight start?

60
12 00
1:00 ✓
− 1 30 m|
11 : 30am B|

11. Find the **range** of -3, 5, 0, -7, 4 ✓ ✓

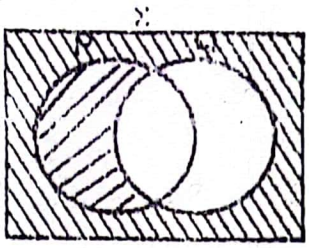
Range = Highest − Lowest
5 − (−7) ✓m|
5 + 7
12 B|

12. Round off **4352** to the nearest hundreds.

TH H T O
4352
Irpv.

4300
+ 100 B1
4400 ✓ B1

13. Describe the shaded region in the venn diagram below.



Set Q' ✓ B2

14. In a line of trees, the mango is the fourth from the left and the 6th from the right of the line. How many trees are in the line altogether?

No. of trees = $(Pos_1 + Pos_2) - 1$ ✓

$(4 + 6) - 1$

$10 - 1$

9 trees

$(P_1 + P_2) - 1$

$(6 + 4) - 1$

$10 - 1$

9

15. **Increase** 70 bags of sugar in the ratio of $\frac{3}{4} : \frac{1}{2}$ $\quad \frac{1}{2} \times 4 : \frac{3}{4} \times 4$

$\frac{1}{2}$ parts rep. 70 bags

$1 \times 1\frac{1}{2}$ parts rep. (70×2) bags

1 part rep. 140 bags

$\frac{3}{4}$ parts rep. $(\frac{3}{4} \times 140)$ bags

35

$\times 3$

105 bags

16. Sanyu bought 5 heaps of oranges at **sh. 6,000**. How many heaps would she buy with sh. 8,400?

sh. 6000 can buy 5 heaps

sh. 8400 can buy $(\frac{5 \times 8400}{6000})$ heaps M1

7 heaps B1

17. The probability that John passes the exam is 0.7. Find the probability that he fails the exams.

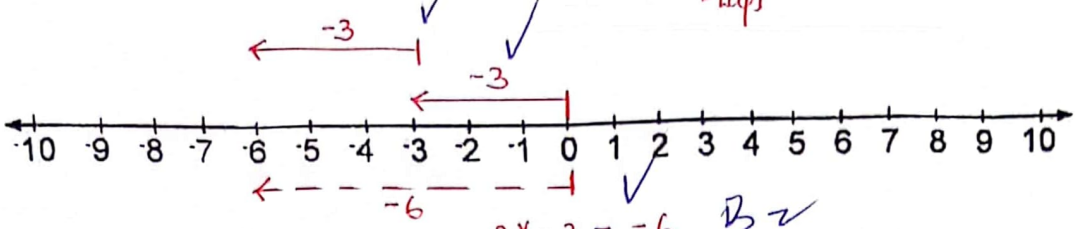
Probability = $1 - 0.7$ ✓

1.0

$- 0.7$ ✓

0.3 B2

18. Using the number line below, work out 2 x -3



4 steps
4 Laps
2 x -3 = -6 B2

19. Express **0.666** ..... as a common fraction in its simplest form.

Let the fraction be P

P = 0.666... -①

10P = 0.666...X10

10P = 6.666... -②

② - ①

10P = 6.666...

- P = - 0.666...

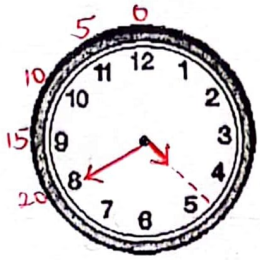
9P = 6

$\frac{9P}{9_1} = \frac{6^2}{9_3}$

$P = \frac{2}{3}$

$0.666... = \frac{2}{3}$

20. On the clock face below, show 20 minutes to 5 o'clock.



SECTION B: 60 MARKS

Attempt **all** *questions in this section.*

Marks for **each part** *of the question are* **indicated** *in the brackets.*

21. **The table below shows how the P.7 candidates of Premier Junior School - Namugo scored in a Friday mental exercise.**

Study and use it to answer the questions that follow.

Marks scored	Number of pupils	Total marks
3	4	12
5	9	45
6	14	84
8	8	64
15	5	75

a) **Complete** the table above. *(04 marks)*

Marks scored · | No. of pupils | Total Marks · | Marks scored

45 5 | 14 | 8 X 8 | 75 15

$\frac{45}{9_1}$ 5 | $\frac{14}{14}$ | 64 | $\frac{75}{5_1}$ 15

5

b) If each of the above candidates was given **two** books, how many books did they get altogether? *(02 marks)*

$\{(4+9+14+8+5)\times 2\}$ books

(40×2) books

80 books

22. Given that **2y = 4x +2**, complete the table below. *(04 marks)*

X	0	1	-2	-2
Y	1	3	-3	-3

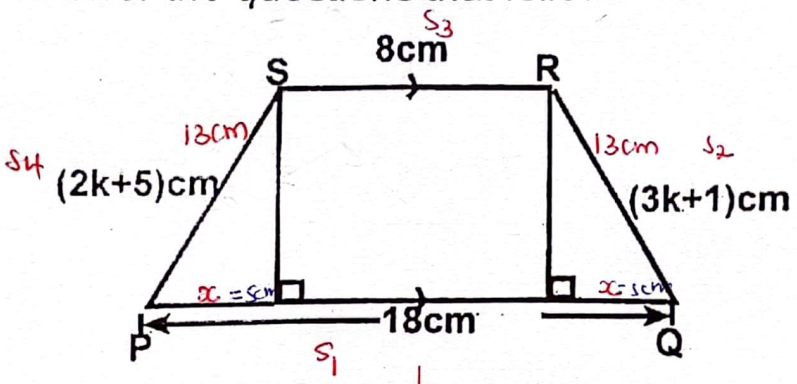
When $X=0$, $y=\frac{2}{2}=1$

$y=3$, $x=\frac{6-2}{4}=\frac{4}{4}=1$

When $x=-2$, $y=\frac{-8+2}{2}=\frac{-6}{2}=-3$

When $y=-3$, $x=\frac{-6-2}{4}=\frac{-8}{4}=-2$

23. **The figure below shows an isosceles trapezoidal cardboard.** *Use it to answer the questions that follow.*



$((3\times 4)+1)$cm

$(12+1)$ cm

13cm

a) Find the value of **k**. *(02 marks)*

$\frac{(3k+1)\text{cm}}{1\text{cm}} = \frac{(2k+5)\text{cm}}{1\text{cm}}$

$3k+1 = 2k+5$

$3k-2k+1 = 2k-2k+5$

$k+1 = 5$

$k+1-1 = 5-1$

$k = 4$

b) Calculate the **perimeter** of the above figure. *(02 marks)*

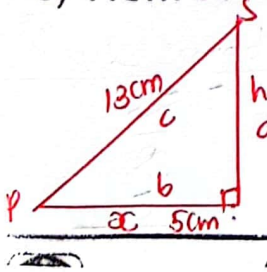
$P = S_1+S_2+S_3+S_4$

$18\text{cm}+13\text{cm}+8\text{cm}+13\text{cm}$

$31\text{cm}+21\text{cm}$

52 cm

c) Work out the **height** of the cardboard. *(02 marks)*



$x+x+8\text{cm} = 18\text{cm}$

$2x+8\text{cm} = 18\text{cm}$

$2x+8\text{cm}-8\text{cm} = 18\text{cm}-8\text{cm}$

$2x = 10\text{cm}$

$\frac{2x}{2} = \frac{10\text{cm}}{2}$

$x = 5\text{cm}$

For the height

$a^2+b^2 = c^2$

$h^2+(5\text{cm})^2 = (13\text{cm})^2$

$h^2+25\text{cm}^2 = 169\text{cm}^2$

$h^2+25\text{cm}^2 = 169\text{cm}^2-25\text{cm}^2$

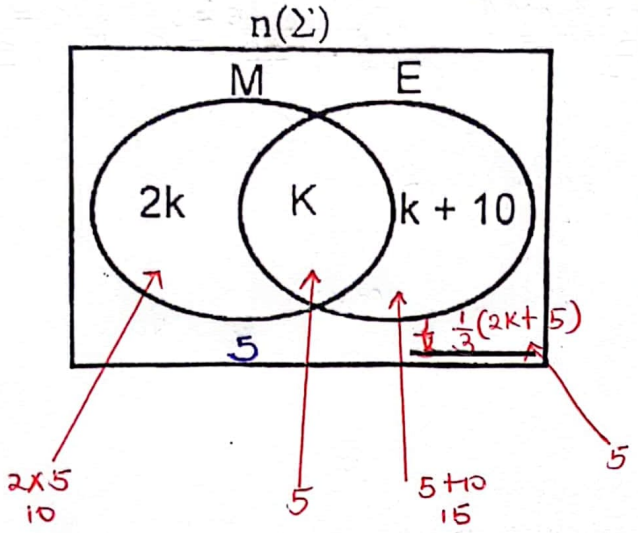
$h^2 = 144\text{cm}^2$

$\sqrt{h^2} = \sqrt{144\text{cm}^2}$

$h = 12\text{cm}$

The venn diagram below shows the number of pupils who like Mathematics (**M**) and English (**E**) in a P.7 class at King's Newton School - Wakiso. The number of pupils who like English only is the same as that of those who like Mathematics. The number of pupils who like other subjects is $\frac{1}{6}$ of those in the union of the two sets.

a) Complete the venn diagram below. *(01 mark)*



Other subjects

$\frac{1}{6}(2K+K+K+10)$

$\frac{1}{6}(4K+10)$

$\frac{1}{\cancel{6}_3} \times \cancel{2}4K + \frac{1}{\cancel{6}_3} \times \cancel{10}^5$

$\frac{2K}{3} + \frac{5}{3}$

$\frac{1}{3}(2K+5)$

b) Find the total number of pupils in the class. *(04 marks)*

(English only) = (Mathematics)

$K+10 = 2K+K$

$K+10 = 3K$

$K-K+10 = 3K-K$

$10 = 2K$

$2K = 10$

$\frac{2K}{\cancel{2}_1} = \frac{\cancel{10}^5}{\cancel{2}_1}$

$K = 5$

$\frac{1}{3}(2\times5+5)$

$\frac{1}{3}(10+5)$

$\frac{1}{\cancel{3}_1} \times \cancel{15}^5$

5

Total.

10 + 5 + 15 + 5

15
+20

35 pupils

c) There are 960 females in a certain village 40% of the people in the village are males. If each person in the village received 200 coffee seedlings, how many seedlings were supplied to the village altogether? *(05 marks)*

Females	Males	Total
60%	40%	100%
960		?

60% rep. 960

$\frac{60\%}{\cancel{60}_1}$ rep. $\frac{\cancel{960}^{16}}{\cancel{60}_1}$

1% rep. 16

100% rep. 16x100

1600 people

No. of seedlings:

(1600 x 200) seedlings

$\begin{array}{r} 16 \\ \times\ 2 \\ \hline 32 \end{array}$

320,000 seedlings

26. **The sum of the values in the table below is the same vertically, horizontally and diagonally.** *Study and use it to answer the questions that follow.*

16	2	12
6	10	14
8	18	4

a) Find the magic sum. *(01 mark)*

16+10+4
30

b) Fill in the missing values. *(03 marks)*

30-(16+2) 30-18 12	30-(16+8) 30 -24 6	30-(10+2) 30 -12 18

27. Follow the instructions below and construct a parallelogram ABCD in the space provided. Draw a horizontal line AB of length 8cm. Draw a perpendicular bisector of line AB. Mark point 0 where the bisector meets line AB. Measure the length of 4cm from 0 along the bisector, mark the point D. Join A to D. Lines AD and AB form two sides of the parallelogram ABCD. Complete the diagram to form a parallelogram. *(04 marks)*

28. **The table below shows how different types of crops are bought and sold at a certain village store.** *Use it to answer the questions that follow.*

Type of crop	Rate at which the store buys	Rate at which the store sells.
1kg of coffee	sh. 3,550	sh. 3,600
1kg of maize	sh. 850	sh. 870
1kg of beans	sh. 1,250	sh. 1,300

a) One day, the storekeeper made a profit of **sh. 3,900** on beans. Find in kilogrammes, the mass of the beans sold. *(02 marks)*

Sh. 3900 / Sh. 1300 = 3 kg

Profit on 1 kg.
sh. 1300 − sh. 1250 = sh. 50

Mass
sh. 3900 / sh. 50
390 / 5
78 kg

b) Wasswa had **174** kilogrammes of coffee that he exchanged for maize, how many kilogrammes of maize did he get? *(03 marks)*

$\left(\frac{174 \times 3550}{850}\right)$ kg.

710 kg

29. The table below shows how a cyclist travelled from town **A** through **B** and **C** to town **D**.

Town	Arrival	Departure
A		10:00a.m
B	10:30a.m	10:45a.m
C	11:15a.m	11:30am
D	1:15p.m	

a) How long did the cyclist stay at town **C**? *(02 marks)*

11 : 30
− 11 : 15
15 minutes

b) Find the time the cyclist took to travel from town **C** to town **D**. *(02 marks)*

$+^{1}\cancel{12}$ $+^{60}$
1 : 15
− 11 : 30
1 45

1 hour 45 minutes

60 + 15
75
− 30
45

OR

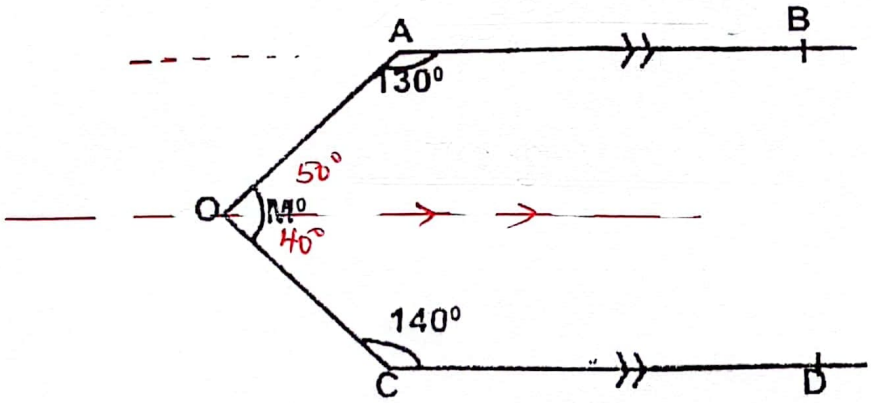
$^{11}\cancel{12}:^{60}00$
− 11 : 30
0 30
+ 1 45
1 45

1 hour 45 minutes

c) Change the arrival time at town **B** to 24 hour clock system. *(01 mark)*

10 : 30
+ 00 00
10 30 Hours

30. In the figure below, AB is parallel to CD, angle OAB = 130° and angle OCD = 140°

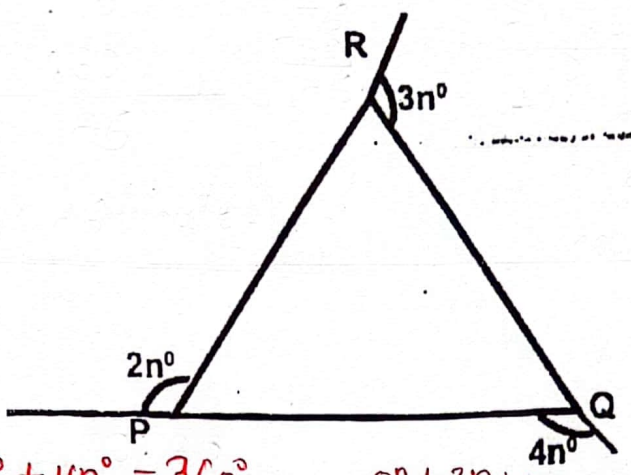


a) Find the value of **M** in degrees. *(02 marks)*

$M^\circ = 50^\circ + 40^\circ$

$M = 90^\circ$

b) The diagram below shows a triangle **PQR**. Find the value of **n** in degrees. *(02 marks)*



$2n^\circ + 3n^\circ + 4n^\circ = 360^\circ$

$9n^\circ = 360^\circ$

$\frac{9n^\circ}{9_1} = \frac{360^{40}}{9_1}$

$n^\circ = 40^\circ$

$2n + 3n + 4n = 360^\circ$

$9n = 360^\circ$

$\frac{9n}{9} = \frac{360^\circ}{9}$

$n = 40^\circ$

31. The median of 4 consecutive even numbers is 27.

a) Find the numbers. *(03 marks)*

~~Let the no~~ let the first number be p

1st	2nd	3rd	4th
p	p+2	p+4	p+6

$\frac{(p+2+p+4)}{2} = 27$

$\frac{(p+p+2+4)}{2} = 27$

$\frac{(2p+6)}{2} = 27$

$\frac{1}{2_1} \times \frac{(2p+6)}{2_1} = 27 \times 2$

$2p + 6 = 54$

$2p + 6 - 6 = 54 - 6$

$2p = 48$

$\frac{2p}{2_1} = \frac{48^{24}}{2_1}$

$p = 24$

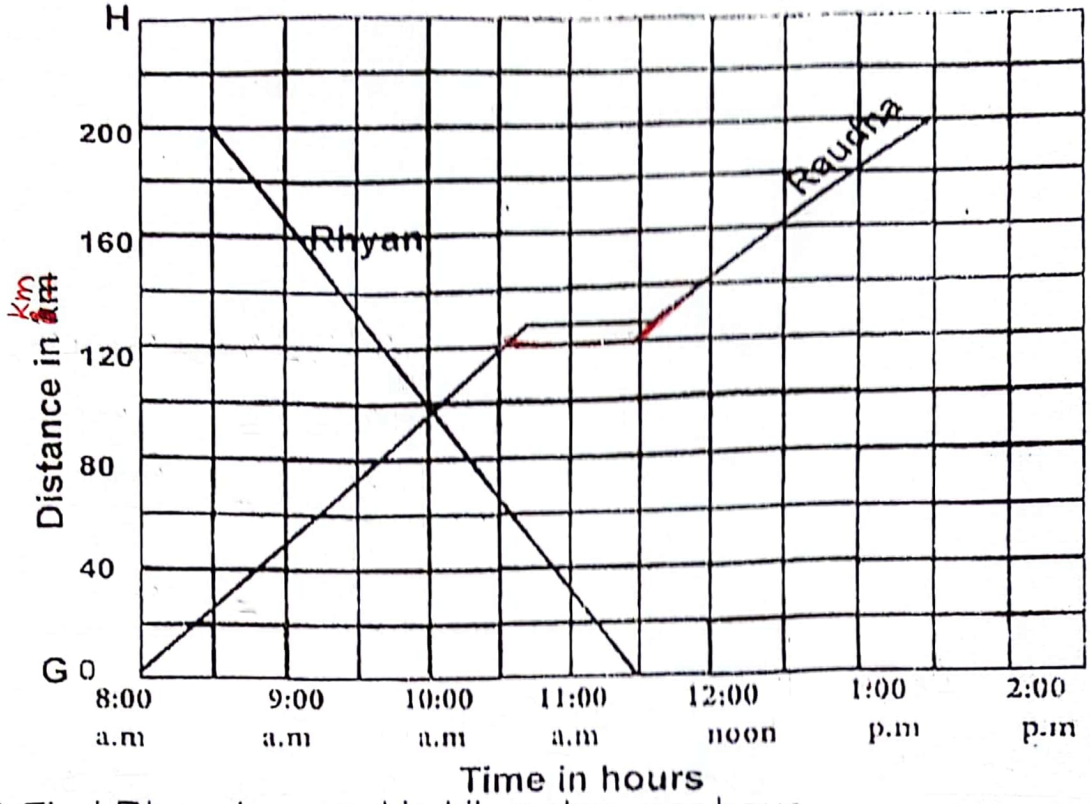
1st	2nd	3rd	4th
24	(24+2) 26	(24+4) 28	(24+6) 30

b) Work out the product of the largest and least numbers. *(02 marks)*

30×24

$$\begin{array}{r} 30 \\ \times\ 24 \\ \hline 120 \\ +600 \\ \hline 720 \end{array}$$

32. The graph below shows the journey made by Ryhan and Raudhar between towns G and H, 200 ~~metres~~ km apart. Ryhan left town H at 8:30a.m and drove at a steady speed to town G. Raudha left town G at 8:00a.m and drove as shown on the graph.



a) Find Rhyan's speed in kilometers per hour. (02 mark

$\frac{200\text{km}}{3\text{h}}$

$66\frac{2}{3}$ km/h

b) At what time did Ryhan and Raudhar meet? .01 r

10:00am

c) Calculate Raudhar's average speed after resting. (02 mar

Average speed = $\frac{\text{Distance covered}}{\text{Time taken}}$

$\frac{(200-120)\text{km}}{2\text{h}}$

$\frac{80\text{km}}{2\text{h}}$

40km/h